

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, of claims in the application:

LISTING OF CLAIMS

- 1 1. (Cancelled).
- 1 2. (Previously Cancelled).
- 1 3. (Currently Amended) A method as recited in Claim 15, wherein the step of receiving new
2 configuration information further comprises the steps of receiving a decision message
3 from the policy decision point and determining whether the decision message
4 identifies an inactive configuration.
- 1 4. (Currently Amended) A method as recited in Claim 15, wherein the step of receiving new
2 configuration information further comprises the steps of receiving a COPS decision
3 message from the policy decision point that identifies the configuration information
4 as an inactive configuration by a specified message type value in a Context object that
5 forms part of the decision message.
- 1 5. (Currently Amended) A method of enforcing network quality of service policy
2 information at one or more policy enforcement points, the method comprising the
3 computer-implemented steps of:
4 receiving active QoS configuration information at a policy enforcement point;
5 receiving new configuration information and storing the new configuration
6 information as an inactive configuration of the policy enforcement point;

7 storing the active QoS configuration information and the inactive configuration in
8 logically separate areas of memory of a network device that serves as the
9 policy enforcement point;
10 determining whether the inactive configuration information is properly functional in
11 combination with the active QoS configuration information;
12 making the new configuration information active in place of the active QoS
13 configuration information only in response to receiving an activation
14 message~~A method as recited in Claim 1;~~
15 wherein the step of receiving new configuration information further comprises the
16 steps of receiving a decision message from the policy decision point that
17 identifies the configuration information as an inactive configuration by a
18 specified flag bit in a message type value in a Context object that forms part
19 of the decision message.

1 6. (Original) A method as recited in Claim 4, wherein determining whether the inactive
2 configuration information is properly functional comprises the steps of combining the
3 inactive configuration information with the active QoS configuration to result in
4 creating a combined configuration and carrying out one or more consistency checks
5 using the combined configuration without actually deploying the combined
6 configuration to the policy enforcement point.

1 7. (Currently Amended) A method as recited in Claim 1~~5~~, wherein making the new
2 configuration information active in place of the active QoS configuration information
3 only in response to receiving an activation message comprises the steps of:

4 receiving an empty install decision message from the policy decision point;
5 updating the active QoS configuration information using the inactive configuration
6 and thereby deploying the inactive configuration as a new active
7 configuration;
8 copying the active configuration to the inactive configuration.

1 8. (Currently Amended) A method as recited in Claim 15, wherein making the new
2 configuration information active in place of the active QoS configuration information
3 only in response to receiving an activation message comprises the steps of:
4 receiving an install named object decision message from the policy decision point;
5 installing the object named in the decision message as the active QoS configuration
6 information;
7 deleting the inactive configuration;
8 copying the active configuration to the inactive configuration.

1 9. (Previously Presented) A method of enforcing network quality of service policy
2 information from a policy server acting as a policy decision point at one or more
3 routers that are acting as policy enforcement points, the method comprising the
4 computer-implemented steps of:
5 receiving active QoS configuration information;
6 receiving a COPS protocol decision message from the policy decision point that
7 identifies new configuration information as an inactive configuration by a
8 specified flag bit in a message type value in a Context object that forms part
9 of the decision message;

10 storing the new configuration information as an inactive configuration of the policy
11 enforcement point;
12 determining whether the inactive configuration information is properly functional in
13 combination with the active QoS configuration information;
14 making the new configuration information active in place of the active QoS
15 configuration information only in response to receiving an activation message.

- 1 10. (Currently Amended) An apparatus for enforcing network quality of service policy
2 information at one of a plurality of policy enforcement points, comprising:
3 means for creating and storing active QoS configuration information at one of the
4 plurality of policy enforcement points;
5 means for receiving new configuration information and storing the new configuration
6 information as an inactive configuration of the policy enforcement point,
7 wherein the active QoS configuration information and the inactive
8 configuration are stored in logically separate areas of memory of a network
9 device that serves as the policy enforcement point;
10 wherein the means for receiving new configuration information is for receiving a
11 decision message from the policy decision point that identifies the
12 configuration information as an inactive configuration by a specified flag bit
13 in a message type value in a Context object that forms part of the decision
14 message;
15 means for determining whether the inactive configuration information is properly
16 functional in combination with the active QoS configuration information;

means for making the new configuration information active in place of the active QoS configuration information only in response to receiving an activation message.

11. (Currently Amended) An apparatus for enforcing network quality of service policy information at one of a plurality of policy enforcement points, comprising:
- one or more network interfaces;
 - one or more processors coupled to the one or more network interfaces for receiving network information therefrom and enforcing one or more network quality of service policies thereon;
 - one or more stored sequences of instructions accessible to the one or more processors and which, when executed by the one or more processors, cause the one or more processors to carry out the steps of:
 - creating and storing active QoS configuration information at one of the plurality of policy enforcement points;
 - receiving new configuration information and storing the new configuration information as an inactive configuration of the policy enforcement point;
- wherein the step of receiving new configuration information further comprises
the steps of receiving a decision message from the policy decision
point that identifies the configuration information as an inactive
configuration by a specified flag bit in a message type value in a
Context object that forms part of the decision message;

20 storing the active QoS configuration information and the inactive
21 configuration in logically separate areas of memory of a network
22 device that serves as the policy enforcement point;
23 determining whether the inactive configuration information is properly
24 functional in combination with the active QoS configuration
25 information;
26 making the new configuration information active in place of the active QoS
27 configuration information only in response to receiving an activation message.

1 12. (Previously Presented) A router acting as a policy enforcement point for enforcing one or
2 more network quality of service policies received from a policy server acting as a
3 policy decision point for a network that includes the router and one or more other
4 policy enforcement points, the router comprising:
5 one or more network interfaces;
6 one or more processors coupled to the one or more network interfaces for receiving
7 network information therefrom and enforcing one or more network quality of
8 service policies thereon;
9 one or more stored sequences of instructions accessible to the one or more processors
10 and which, when executed by the one or more processors, cause the one or
11 more processors to carry out the steps of:
12 receiving active QoS configuration information;
13 receiving a COPS protocol decision message from the policy decision point
14 that identifies new configuration information as an inactive

15 configuration by a specified flag bit in a message type value in a
16 Context object that forms part of the decision message;
17 storing the new configuration information as an inactive configuration of the
18 policy enforcement point;
19 determining whether the inactive configuration information is properly
20 functional in combination with the active QoS configuration
21 information;
22 making the new configuration information active in place of the active QoS
23 configuration information only in response to receiving an activation
24 message.

1 13. (Cancelled)

1 14. (Previously Cancelled).

1 15. (Currently Amended) A computer-readable medium as recited in Claim 13~~7~~, wherein the
2 step of receiving new configuration information further comprises the steps of
3 receiving a COPS decision message from the policy decision point and determining
4 whether the decision message identifies an inactive configuration

1 16. (Currently Amended) A computer-readable medium as recited in Claim 13~~7~~, wherein
2 the step of receiving new configuration information further comprises the steps of
3 receiving a decision message from the policy decision point that identifies the

configuration information as an inactive configuration by a specified message type value in a Context object that forms part of the decision message.

17. (Currently Amended) A computer-readable medium carrying one or more sequences of instructions for enforcing network quality of service policy information at one or more policy enforcement points, which instructions, when executed by one or more processors, cause the one or more processors to carry out the steps of:
receiving active QoS configuration information at a policy enforcement point;
receiving new configuration information and storing the new configuration information as an inactive configuration of the policy enforcement point;
storing the active QoS configuration information and the inactive configuration in logically separate areas of memory of a network device that serves as the policy enforcement point;
determining whether the inactive configuration information is properly functional in combination with the active QoS configuration information;
making the new configuration information active in place of the active QoS configuration information only in response to receiving an activation message~~A computer-readable medium as recited in Claim 13;~~
-wherein the step of receiving new configuration information further comprises the steps of receiving a decision message from the policy decision point that identifies the configuration information as an inactive configuration by a specified flag bit in a message type value in a Context object that forms part of the decision message.

1 18. (Original) A computer-readable medium as recited in Claim 16, wherein determining
2 whether the inactive configuration information is properly functional comprises the
3 steps of combining the inactive configuration information with the active QoS
4 configuration to result in creating a combined configuration and carrying out one or
5 more consistency checks using the combined configuration without actually
6 deploying the combined configuration to the policy enforcement point.

1 19. (Currently Amended) A computer-readable medium as recited in Claim 137, wherein
2 making the new configuration information active in place of the active QoS
3 configuration information only in response to receiving an activation message
4 comprises the steps of:
5 receiving an empty install decision message from the policy decision point;
6 updating the active QoS configuration information using the inactive configuration
7 and thereby deploying the inactive configuration as a new active
8 configuration;
9 copying the active configuration to the inactive configuration.

1 20. (Currently Amended) A computer-readable medium as recited in Claim 137,
2 wherein making the new configuration information active in place of the active
3 QoS configuration information only in response to receiving an activation
4 message comprises the steps of:
5 receiving an install named object decision message from the policy decision
6 point;

installing the object named in the decision message as the active QoS
configuration information;
deleting the inactive configuration;
copying the active configuration to the inactive configuration.

21. (New) A method of enforcing network quality of service policy information at a plurality of policy enforcement points, the method comprising at each of the plurality of policy enforcement points performing the computer-implemented steps of:
receiving active QoS configuration information at a policy enforcement point;
receiving new configuration information and storing the new configuration information as an inactive configuration of the policy enforcement point;
wherein the step of receiving new configuration information further comprises the steps of receiving a decision message from the policy decision point that identifies the configuration information as an inactive configuration by a specified flag bit in a message type value in a Context object that forms part of the decision message;
storing the active QoS configuration information and the inactive configuration in logically separate areas of memory of a network device that serves as the policy enforcement point;
determining whether the inactive configuration information is properly functional in combination with the active QoS configuration information;

18 making the new configuration information active in place of the active QoS
19 configuration information only in response to receiving an activation
20 message.

1 22. (New) A computer-readable medium carrying one or more sequences of instructions
2 for enforcing network quality of service policy information at a plurality of policy
3 enforcement points, which instructions, when executed by one or more
4 processors, cause the one or more processors to carry out, at each of the plurality
5 of policy enforcement points, the steps of:
6 receiving active QoS configuration information at a policy enforcement point;
7 receiving new configuration information and storing the new configuration
8 information as an inactive configuration of the policy enforcement point;
9 wherein the step of receiving new configuration information further comprises the
10 steps of receiving a decision message from the policy decision point that
11 identifies the configuration information as an inactive configuration by a
12 specified flag bit in a message type value in a Context object that forms
13 part of the decision message;
14 storing the active QoS configuration information and the inactive configuration in
15 logically separate areas of memory of a network device that serves as the
16 policy enforcement point;
17 determining whether the inactive configuration information is properly functional
18 in combination with the active QoS configuration information;

19 making the new configuration information active in place of the active QoS
20 configuration information only in response to receiving an activation
21 message.